REMARKS

In the Office Action mailed on August 31, 2006, the Examiner took the following action: (1) objected to the drawings; (2) rejected Claims 1-51 under 35 U.S.C. § 112, second paragraph as being indefinite; (3) rejected Claims 1-51 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement and enabling requirement; and (4) rejected Claims 1-51 under 35 U.S.C. § 102(e) as being anticipated by Bonse et al., U.S. Patent Application Publication No. 2006/0107508 (hereinafter "Bonse"). With great respect to the analysis set forth in the Office Action, Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

Drawing Objection

The Examiner objected to the drawings on grounds that the drawings do not show every feature of the invention specified in the claims. 37 CFR §1.83(a). Applicants' Claim 1 recites "computing a transformation matrix" and "moving at least one of the first and second components according to the transformation matrix." Claims 18, 31, and 41 recite similar matter. Applicants respectfully submit that because the transformation matrix itself is not claimed, but rather only the computing of a transformation matrix, the transformation matrix itself does not need to be shown in the drawings. The Examiner notes the step of "computing a transformation matrix" is shown in the drawings. (Office Action, page 2, paragraph 4).

Nevertheless, in the interest of advancing prosecution of the application, Applicants submit concurrently herewith replacement formal drawings, in which a representative transformation matrix is now shown in Figure 3, adjacent to the "computing a transformation matrix" block. Therefore, it is respectfully requested that the objection to the drawings be removed.

Claim Rejection: 35 U.S.C. § 112, Second Paragraph

With respect to the Examiner's rejections under 35 U.S.C. §112, second paragraph, Applicants have amended Claims 1, 8-9, 11-14, 16, 18, 29, 31-32, 35-43, and 46-51. Claims 1, 13-14, 18, 31, 38, 41, and 49 have been amended to recite "computing a transformation matrix for moving at least one of the first and second component to provide substantial design conformity between the measurements and the desired position information," in order to clarify the scope of the present invention. Claim 1 and 18 have also been amended to clarify the second set of measurements as "measuring at least one of a second surface position and a second plurality of discrete point positions associated with the second component, the second plurality of discrete point positions being at least one of on and adjacent to the second component," therefore removing the informalities objected to by the Examiner in Claims 5, 8, 15, and 26-27.

Additionally, Claims 8-9, 11, 35-37, 41, 42, and 46-48 have been amended to establish a clear and proper antecedent basis. Claims 11-12, 37, and 48 have been amended to remove the term "acceptably" and replace it with the more definite term "substantially," which is supported in the specification. Claims 13, 14, 38, and 49 have been amended to remove the term "corresponding." Claims 16, 29, 31-32, 35-41, 43, and 46-51 have been amended to remove "adapted to" by replacing it with the positively limiting term "configured."

In order to provide further clarity, the specification has also been amended. No new matter has been added to the specification for at least the following reasons: (1) the specification discloses a "desired" or "as-designed" position of the component (Spec., page 4, lines 17-20, and Spec., page 8, lines 11-24); (2) the specification discloses alignment and tolerances in an example (Spec., page 9, lines 14-15); (3) the specification refers to three-dimensional space with reference to a CAD model (Spec., page 4, lines 20-22, and Spec., page 8, lines 14-17) and; (4) it is well known to a person skilled in the art that a transformation matrix is used to move an object

through three-dimensional space, including rotation about each of the three axes. Further, Claims 1, 8-9, 11-14, 16, 18, 29, 31-32, 35-43, and 46-51 have not been amended as set forth above for reasons related to patentability over the prior art or to narrow the Claims.

Claim Rejection: 35 U.S.C. § 112, First Paragraph

The Examiner has also objected to Claims 1-51 as failing to comply with the written description requirement and enabling requirement. As noted above, Claims 1, 18, 31, and 41 have been amended to remove ambiguous language. Additionally, to comply with the enabling requirement, the transformation matrix has been more thoroughly described. For example, the amended portion of the specification provides an example embodiment describing the transformation matrix. Additionally, Claims 1, 18, 31, and 41 have been amended to incorporate enabling detail. Again, no new matter has been added for the reasons stated in the above section and Claims 1, 8-9, 11-14, 16, 18, 29, 31-32, 35-43, and 46-51 have not been amended as set forth above for reasons related to patentability over the prior art or to narrow the Claims.

Claim Rejection: 35 U.S.C. § 102(e)

Claims 1-51 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2006/0107508 to Bonse. Applicants respectfully traverse the rejection and submit that the claims are allowable over the reference cited for the reasons explained in detail below.

Applicants' Claim 1 recites measurements associated with both a first and second component. Bonse is directed to a tool/sensor combination which only measures a single component. For example, Bonse discloses "vehicle bodies are fed to the tool on a conveyor belt,

for which reason variations in position of the vehicle body with respect to the robot-guided tool [tool/sensor] occur." (Bonse, page 1, paragraph 0004). According to Bonse, the only component measured by the sensor is the vehicle body because the tool/sensor, described here as the "robot-guided tool," is not a separate component that is measured.

To provide further clarity, the analogy in Bonse of the tail light can be further expounded. Bonse describes "to bring about highly precise positioning of the tail light in its receptacle on the vehicle body, the corresponding *connection areas* must be provided in the vehicle body in such a way that highly precise orientation of the tail light with respect to these reference areas (which are adjacent to the tail light) is ensured." (Bonse, page 1, paragraph 0003, emphasis added.) Stated another way, Bonse is making a connection area (attachment point) for a tail light rather than positioning the tail light relative to the vehicle body using measurements associated with both a first and second component, then assembling the tail light to the vehicle body once it is in a proper position. In the Bonse example, deviations from the design of the assembled part (the tail light) are not taken into consideration. Instead, only the deviations from the design of the vehicle body (or mounting component) are measured. Therefore, Bonse fails to disclose each the elements in Applicants' Claim 1.

Additionally, incorrectly inferring that the tool/sensor combination is a second component does not cure Bonse's shortfall. First, the tool is clearly not assembled to a component. Second, the Bonse method does not provide the functionality of the method claimed by Applicants. Bonse recites "a sensor system which is permanently connected to the tool and forms a robot-guided tool/sensor combination with it is used to position the processing tool with respect to the vehicle body." (Bonse, page 2, paragraph 0014). The permanent connection of the tool and sensor described in Bonse is not advantageous to the method taught by Applicants' Claim 1 of "moving at least one of the first and second components according to the

transformation matrix." If a sensor is permanently connected to the tool as in Bonse, then the sensor must be removed from the tool for each new assembly (incorrectly assuming the tool is a second component). This movement of the sensors would add additional time and effort to the assembly process. Stated another way, the measuring systems should be independent from the components to enable repetitious assembly of a first and second component.

Bonse also discloses "the number of sensors used can be freely selected," noting that more than one sensor, or different types of sensors, may be incorporated into the method. (Bonse, page 2, paragraph 0022.) However, nowhere does Bonse indicate that additional sensors would be mounted apart from the tool/sensor combination. Therefore, it is correctly inferred that all sensors disclosed in Bonse are part of the tool/sensor combination.

Therefore, Bonse does not disclose a method of assembling first and second components as in Applicants' Claim 1. For the same reasoning given for Claim 1, independent Claims 18, 31, and 41 are also allowable.

Claims 2-17, 19-30, 32-40, and 42-51 are allowable at least for their dependency on allowable base Claims. Further, the additional limitations in these dependant claims provide limitations which are not taught by the cited reference. For example, Claim 9 recites "The method of Claim 1, wherein comparing the measured positions of the at least one surface position and the plurality of discrete point positions with a desired position information includes applying a *fitting routine* to the measured positions and the desired position information." Similar limitations are recited in Applicants' Claims 25, 36, and 47. Bonse does not include applying a fitting routine to the measured positions and the desired position information, or any other equivalent limitation as recited by Applicants. Therefore, dependant claims 9, 25, 31, and 41 are allowable for this reason. Other dependent claims recite unique limitations not taught by Bonse, making them allowable for reasons other than their dependence on allowable base claims.

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Applicants respectfully submit that Claims 1-51 are in condition for allowance, and that the rejection under 35 U.S.C. § 102(e) should be withdrawn.

CONCLUSION

For the foregoing reasons, Applicants respectfully submit that pending claims 1-51 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

Dated: _Nov. 27, 2006_   By: _____

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Enclosures: Replacement Formal Drawings